FOR ADMINISTRATIVE USE

CDC INFLUENZA SURVEILLANCE REPORT

NO. 26 NOVEMBER 20, 1957

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SPECIAL NOTE

Information contained in this report is a summary of data reported to CDC by State Health Departments, Epidemic Intelligence Service Officers, collaborating influenza diagnostic laboratories, and other pertinent sources. Much of it is preliminary in nature and is intended for those involved in influenza control activities. Anyone desiring to quote this information is urged to contact the person or persons primarily responsible for the items reported in order that the exact interpretation of the report and the current status of the investigation be obtained. State Health Officers, of course, will judge the advisability of releasing any information from their own states.

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I. Summary of Information

Influenza and pneumonia mortality for the United States as a whole has decreased this week for the first time since the beginning of the Asian strain influenza epidemic. Deaths reported for the week ending November 16 numbered 766, compared to 889 for the week ending November 9 and 859 for the previous week. Thus, the current epidemic appears to have passed its peak and started to decline. Every division showed a decline with the exception of the Pacific, which reported a striking increase over the week ending November 9.

At least 1390 counties have now reported influenza since the first appearance of the Asian strain in the United States. This represents 45% of the counties of the nation. States reporting large numbers of new counties affected were primarily those of the northern Middle West and a central band of Eastern States. Scattered reports continue to come to CDC from the Mountain States, although the influenza and pneumonia mortality curve has returned to the baseline for the division. The New England and Middle Atlantic divisions are now reporting few new counties with outbreaks, which is in accord with the rapidly declining mortality curves for these areas.

Industrial absenteeism in the 36 reporting cities appears to be leveling off or declining. A few cities have returned to normal absentee rates. Only a few cities showed increases during the most recent reporting week and, of these, only three (Seattle, Nashville, and Jacksonville) showed large increases. The first rise in industrial absenteeism in a city appears to be consistently followed, about one week later, by the first significant rise in influenza and pneumonia mortality.

A total of 44,570,294 ml. of Asian strain influenza vaccine has been released through November 13. This includes 4,187,575 ml. released since November 6. In this last release were 1,804,060 ml. of 400 cca vaccine and 957,845 ml. of polyvalent vaccine.

National Health Survey data shows that the week ending October 19 was the peak week for the United States both in terms of number of new cases involving one or more days of bed disability and in terms of average number of persons in bed each day. The peak of the mortality curve therefore lags about three or four weeks behind the Health Survey peaks for disease incidence.

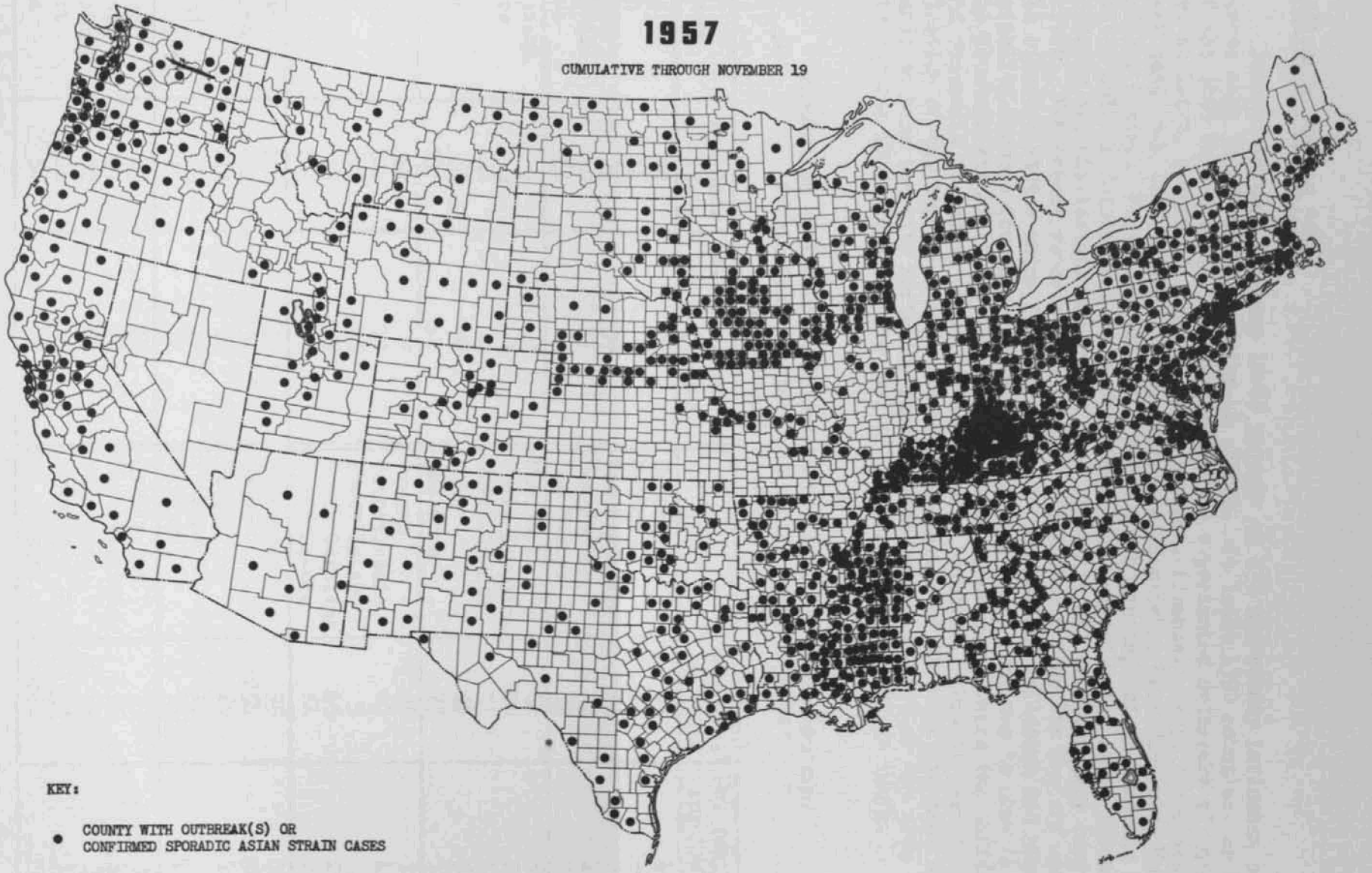
Information on two groups of influenza-associated deaths has recently been reported to CDC. These studies have been summarized and compared in this report.

Under Miscellany will be found an interesting report of isolation of Asian strain influenza virus from a lymph node in a fatal case.

INFLUENZA

1957

CUMULATIVE THROUGH NOVEMBER 19



KEY:

● COUNTY WITH OUTBREAK(S) OR
CONFIRMED SPORADIC ASIAN STRAIN CASES

DHEW PHS-CDC

ATLANTA, GA. - APRIL, 1958

II. Influenza Map and Table

During the week November 12-19 reports of 135 new county influenza occurrences came to CDC from 22 of the 48 states. At least 1390 counties, or 45% of the 3068 United States counties, have now experienced outbreaks of influenza or, at least, confirmed cases of Asian strain influenza. Large increases this week came from Iowa, North Dakota, Tennessee, Kentucky, West Virginia, Montana, and New Mexico. North Dakota, which noted the beginnings of an epidemic in the latter half of October and early November, is now experiencing rapid spread. Kentucky and Mississippi now report that virtually all counties have been involved. New county reports have dropped off markedly from New England and Middle Atlantic states which is in accord with the falling influenza and pneumonia mortality figures for these areas. Scattered reports continue to come in from the Mountain states (i.e., Montana, New Mexico), however, where the influenza and pneumonia mortality curve has returned to baseline. This is perhaps a reflection of the hugh size and scattered population of the Mountain area which tends to make the city mortality reports less representative of the area than the reports from cities in the smaller and more crowded Eastern areas.

Tabulation of Influenza Outbreaks or Confirmed Sporadic Asian Strain Cases in the Continental United States June through November 19, 1957

State	No. Cos. in State	No. Cos. Reporting Influenza	State	No. Cos. in State	No. Cos. Reporting Influenza
Alabama	67	19	Nebraska	93	40
Arizona	14	8	Nevada	17	—*
Arkansas	75	37	New Hampshire	10	2
California	58	45	New Jersey	21	19
Colorado	63	23	New Mexico	32	22
Connecticut	8	7	New York	62	50
Delaware	3	1	North Carolina	100	22
D. C.	—	1	North Dakota	53	16
Florida	67	30	Ohio	88	69
Georgia	159	41	Oklahoma	77	17
Idaho	44	7	Oregon	36	32
Illinois	102	19	Pennsylvania	67	40
Indiana	92	26	Rhode Island	5	5
Iowa	99	65	South Carolina	46	20
Kansas	105	9	South Dakota	68	20
Kentucky	120	117	Tennessee	95	35
Louisiana	64	37	Texas	254	67
Maine	16	16	Utah	29	17
Maryland	23	19	Vermont	14	7
Massachusetts	14	12	Virginia	98	43
Michigan	83	45	Washington	39	33
Minnesota	87	28	West Virginia	55	42
Mississippi	82	80	Wisconsin	71	33
Missouri	114	15	Wyoming	23	15
Montana	56	16	Totals:	3068	1390

*Sporadic confirmed cases -- counties not known

III. Current Analysis of Influenza and Pneumonia Mortality*

Table 1

Current Influenza and Pneumonia Deaths
in 108 United States Cities

Division	Number of Cities		Deaths (including estimates**) during weeks ending		
	In study	Reporting this week	November 2 (107 cities)	November 9 (107 cities)	November 16 (105 cities)
All Divisions	108	105	859	889	766
New England	14	13	77	70	56
Mid. Atlantic	17	16	298	247	191
E. North Central	18	18	180	159	153
W. North Central	9	9	67	104	68
S. Atlantic	9	9	71	106	100
E. South Central	8	7	46	57	35
W. South Central	13	13	61	85	72
Mountain	8	8	20	12	10
Pacific	12	12	39	49	81

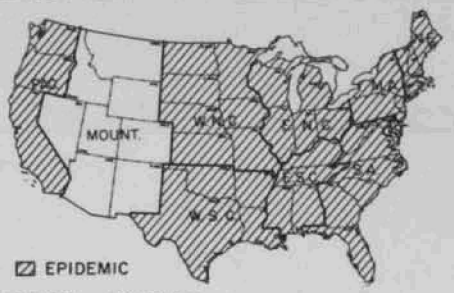
**The number of deaths given includes estimates for cities not reporting in a given week. The table is corrected for preceding weeks as late figures are received. The chart will be corrected only for gross discrepancies.

Comment

Every Division in the United States showed a decline in influenza and pneumonia deaths with the exception of the Pacific Division. Thus, for the United States as a whole the maximum number of deaths during the current epidemic appears to have occurred. The Pacific Division was the only Division remaining at a fairly stable level during the period of sharp increases in all other areas.

*Prepared by the Statistics Section, CDC.

WEEKLY PNEUMONIA AND INFLUENZA DEATHS



"EPIDEMIC THRESHOLD"

"NORMAL INCIDENCE"

(SEE EXPLANATION ON BACK OF SHEET)

NUMBER OF DEATHS

UNITED STATES, 108 Cities

SOUTH ATLANTIC, 9 Cities

NEW ENGLAND, 14 Cities

EAST SOUTH CENTRAL, 8 Cities

MIDDLE ATLANTIC, 17 Cities

WEST SOUTH CENTRAL, 13 Cities

EAST NORTH CENTRAL, 18 Cities

MOUNTAIN, 8 Cities

WEST NORTH CENTRAL, 9 Cities

PACIFIC, 12 Cities

WK. NO. — 5 10 15 20 25 30 35 40 45 50

JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC

DHEW - PHS - BSS - CDC

ATLANTA, GA. SEPTEMBER, 1957

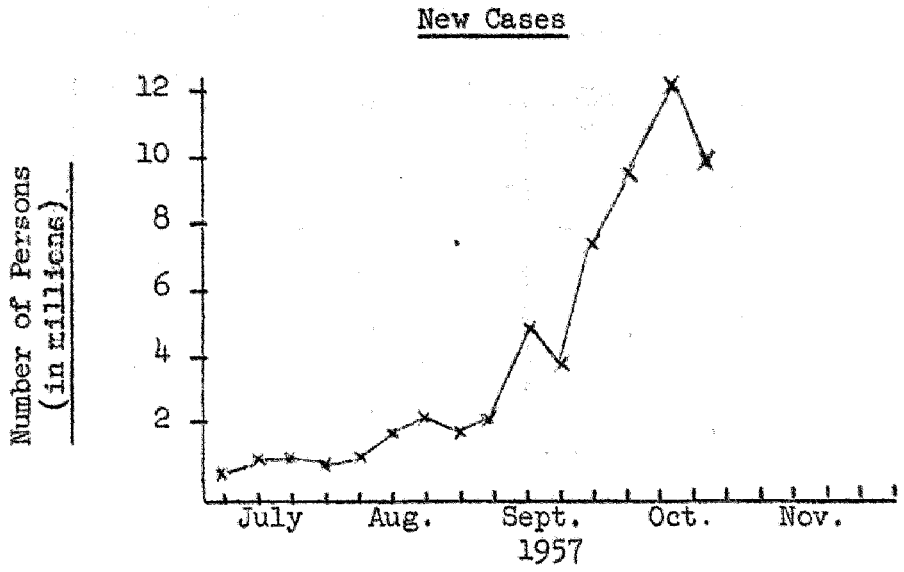
58-70

Interpretation of "Epidemic Threshold"

If two successive weeks incidence in excess of the "epidemic threshold" is defined as a "run of two", then with "normal incidence" a "run of two" will be uncommon. When incidence exceeds normal levels a "run of two" will be more likely to occur. Specifically, with normal incidence, the odds against one or more "runs of two" during a period of 52 weeks are four to one. If incidence increases above normal by two standard deviations the odds are even that a "run of two" will follow immediately.

A description of the method used in constructing the charts is given in Influenza Surveillance Report No. 16.

IV. Data from National Health Survey (Under the direction of Dr. Forrest Linder)



ACUTE UPPER RESPIRATORY DISEASES*

Estimates for continental United States

Week	New cases involving one or more days of bed disability	Average number of persons in bed each day
July 14 - 20	379,000	197,000
July 21 - 27	1,203,000	342,000
July 28 - Aug 3	1,264,000	425,000
Aug 4 - 10	955,000	339,000
Aug 11 - 17	1,181,000	447,000
Aug 18 - 24	1,758,000	675,000
Aug 25 - 31	2,159,000	654,000
Sept 1 - 7	1,819,000	651,000
Sept 8 - 14	2,279,000	856,000
Sept 15 - 21	4,487,000	1,152,000
Sept 22 - 28	3,952,000	2,094,000
Sept 29 - Oct 5	7,773,000	2,845,000
Oct 6 - 12	9,712,000	4,551,000
Oct 13 - 19	12,238,000	5,812,000
Oct 20 - 26	**10,048,000	**5,460,000

*Including influenza, pneumonia, and other similar conditions.
**Provisional.

The above data are compiled from the household interview survey which is a part of the program of the U. S. National Health Survey. The household survey is conducted by trained and supervised lay interviewers. The weekly samples consist of interviews for about 700 households or 2,200 persons. Since data are collected for the two prior weeks, each week's interviewing gives information on 4,400 person-weeks of health experience. Approximate sampling errors are in the range of 15%. The estimates of sampling error do not include allowance for error of response and nonreporting.

V. Industrial Absentee Rates for 36 Cities of the United States

(Compiled from a number of sources)

City	% of Total Absent							
	Oct. 1956	9-29 1957	October 1957 1-5	7-11	13-19	20-26	10/27-11/2	11/3-9
Boston	6.9	-	-	-	9.2	9.7	10.3	10.4
Manhattan	4.0	-	-	UP	7.9	6.5	5.3	4.3
Buffalo	6.7	-	9.4	8.4	8.2	7.4	6.8	-
Syracuse	6.3		UP/NR	-	8.6	7.7	7.0	-
Philadelphia	5.3	-	-	9.0	11.6	10.3	8.5	7.1
Pittsburgh	4.5	-	-	9.5	13.0	12.4	7.7	6.4
Washington	6.2	-	7.1	7.2	8.7	9.6	9.2	8.3
Baltimore	5.9	-	-	UP/NR	9.6	9.9	10.5	10.4
Richmond	5.4	-	-	-	-	8.9	13.8	9.0
Atlanta	5.9		UP/NR	UP	7.3	7.2	8.2	8.7
Miami	10.3	-	-	-	-	-	-	-
Memphis	4.7	-	-	-	-	*	6.5	6.2
Birmingham	4.0	-	-	UP	6.6	*	7.5	6.6
Nashville	3.6	-	-	UP/NR	6.8	*	9.5	10.7
Jacksonville	8.0	-	-	-	-	8.5	9.1	10.0
New Orleans	6.4	-	-	-	-	9.2	8.7	7.7
Cleveland	4.5		-	5.0	5.3	4.8	5.2	5.4
Columbus	5.0		-	-	5.8	7.2	7.5	6.2
Cincinnati	6.0	-	-	-	7.3	7.6	6.9	6.3
Detroit	6.6	-	9.8	11.4	9.1	*	7.6	7.1
Indianapolis	5.4	-	-	-	7.9	*	10.7	10.3
Milwaukee	6.3	-	-	8.0	10.2	9.5	7.6	7.3
Chicago	5.6	-	7.8	8.2	8.2	7.6	6.9	6.1
Minneapolis	4.6	-	-	-	6.6	7.3	7.7	6.8
Omaha	5.4	-	-	-	7.5	7.6	8.7	8.2
St. Louis	3.9	-	-	-	4.9	6.5	7.8	8.1
Kansas City	4.8	-	-	-	6.3	8.3	9.2	7.0
Houston	4.0	-	-	UP/NR	7.1	5.6	4.8	4.7
Dallas	4.3	-	-	-	5.6	7.3	10.3	9.7
Oklahoma City	3.4	-	-	-	3.8	4.5	5.8	6.1
Denver	7.9	-	10.2	11.8	9.6	9.5	-	-
Phoenix	8.0	-	10.8	9.5	8.1	-	8.8	-
Salt Lake City	4.8	-	9.8	10.5	9.4	8.3	6.4	6.2
Seattle	5.6	-	-	-	6.1	7.1	6.5	8.3
Los Angeles	5.9	-	-	-	6.2	7.5	-	-
San Francisco	9.3	-	-	-	-	10.1	10.0	10.5

- = normal absentee rate
UP = increased absenteeism
NR = no rate available

*Data not available

V. Industrial Absentee Data

Miami continues to be the only reporting city which has experienced no increases above normal industrial absenteeism this fall. Los Angeles and Denver, which returned to normal levels between October 27 and November 2, remained normal during the period November 3-9. During this period Buffalo, Syracuse, and Phoenix also returned to normal absenteeism. Between November 3-9 several cities, Seattle, Jacksonville, and Nashville, reported rather marked increases in industrial absenteeism. Only a few other cities, San Francisco, Oklahoma City, St. Louis, Cleveland, Atlanta and Boston, noted increases during the period and these were very small. Twelve of the reporting cities have been subjected to a preliminary analysis which reveals that there is usually a one week interval after a 40% rise of industrial absenteeism above normal before the first significant rise of influenza and pneumonia mortality occurs. This one week interval appears to be quite consistent from city to city.

VI. Influenza Vaccine Production and Distribution

Influenza Vaccine Released

(Totals through November 13, 1957)

Pharmaceutical Concern	400 cca Monovalent Asian strain	200 cca Monovalent Asian strain	Polyvalent with Asian strain
Lederle	225,760 ml	8,265,170 ml	537,960 ml
Lilly		2,146,717	597,305
Merck, Sharpe & Dohme	1,284,540	13,884,520	
National Drug	392,310	7,615,275	2,054,435
Parke, Davis		657,835	
Pitman-Moore	416,850	5,015,242	1,476,375

Total released to date: 44,570,294 ml
Amount released since November 6: 4,187,575 ml

Estimated Vaccine Production:

November	24,800,000 ml
December	12,350,000 ml

VII. Reports of Influenza-Associated Deaths

A large number of detailed reports of deaths associated with influenza have been received by CDC. It has been difficult to draw conclusions from them because they are selected cases and not representative of the population at large. We have recently received data on a series of influenza deaths in Boston hospitals from Drs. Maxwell Finland, Christopher Martin, and Calvin Kunin. Another tabulation of deaths investigated by New York State Health Department has been received from Drs. Robert Albrecht and Jerome Klein. This information is summarized below for comparison.

	Boston		New York State	
AGE	Fetal	2	Newborn	5
	0-10	1	1 mo.-1 yr.	4
	11-20	9	1 yr.-4 yr.	3
	21-30	5	5 yr.-14 yr.	11
	31-40	2	15 yr.-24 yr.	13
	41-50	5	25 yr.-34 yr.	11
	51-60	6	35 yr.-44 yr.	8
	61-70	3	45 yr.-54 yr.	15
	71/	4	55 yr.-64 yr.	17
			64 yr./	34
		37		121
COMPLICATING ILLNESS	Cardiovascular	11	Previously normal	71
	Respiratory	7	Pre-existing disease	68
	Pregnancy	3		139
	Cirrhosis, cancer, etc.	7	Cardiovascular	33
	None	9	Respiratory	11
		37	Pregnancy	6
			Mental disease, other	35
			Total diseases in 68 patients	85
BACTERIOLOGY	Staphlyococci	15	Staphylococci	6
	Staph and Group A Streptococcus	1	Beta Strep	1
	Group A Strep	2	Pneumococci	1
	Pneumococcus	1	H. Influenzae	1
	No bacteria	10	No bacteria	3
		29		12

Comment: The age specific death rate appears to be highest in the older age groups. This is not as striking in the Boston Hospital data, which probably indicates that young persons are more likely to survive long enough for hospitalization. The staphylococci remain the most common fatal bacterial pneumonias. Previous clinical reports have stated that pneumococcal pneumonia is probably most common but seldom results in death. Approximately one-fourth of the pneumonias have been sterile. At present it appears that most of the sterile pneumonias are found in young persons or those with a tendency to develop pulmonary edema because of heart disease. These persons would be able to combat bacterial infections successfully, only to succumb to viral hemorrhagic pneumonia and pulmonary edema.

VIII. Miscellany

Charity Hospital Data

(Data provided by Hospital Staff and Dr. John L. Bruce, La. Dept. of Health)

Patients seen in the Admitting Room and the number with influenza-like illness

Week Ending	NEGRO Total Patients Seen	NEGRO Flu-Like Illness	NEGRO % of Total	WHITE Total Patients Seen	WHITE Flu-like Illness	WHITE % of Total
Aug. 10	2724	206	7.5	882	19	2.1
Aug. 17	2850	391	13.6	850	38	4.5
Aug. 24	3330	918	27.4	967	130	13.5
Aug. 31	5641	1479	26.0	1489	206	13.7
Sept. 7	5033	1414	28.0	1385	207	14.9
Sept. 14	4427	1123	25.2	1480	154	10.4
Sept. 21	4738	968	20.4	1600	228	14.2
Sept. 28	4743	947	20.0	1640	302	18.4
Oct. 5	4433	776	17.5	1502	291	19.4
Oct. 12	5010	941	18.8	1664	334	20.0
Oct. 19	4681	743	15.9	1653	259	15.7
Oct. 26	4333	627	14.5	1406	195	13.9
Nov. 2	4346	639	14.7	1274	223	17.5
Nov. 9	4439	528	11.9	1552	134	8.6

Isolation of Virus from Lymph Node

(Reported by Dr. Tom Chin, Kansas City Field Station)

A 55-year-old white male died on October 30, 1957. On October 29 he developed backache, chills and fever. The following day he was seen by his private doctor who noted signs of pneumonic consolidation. He was sent immediately to the hospital where he expired shortly after arrival. At autopsy he had an extensive pneumonitis. At necropsy a piece of lung and an enlarged paratracheal lymph node was obtained for viral study. From both specimens Asian strain influenza A was isolated. Dr. Chin states that it is entirely possible that the node was contaminated with adjacent lung material, but he suggests that others attempt to confirm his finding.

"The CDC Laboratory Branch is interested in receiving subcultures of staphylococcus, pneumococcus, streptococcus, hemophilus and klebsiella strains isolated from influenza cases complicated with pneumonia, and especially from fatal cases. Each culture should be well identified for a possible later reference. The strains should be well packaged and mailed in the regular manner to:

Communicable Disease Center
Laboratory Branch
P. O. Box 185
Chamblee, Georgia
Attn: Dr. Elaine L. Updyke"

Reactions to Asian Strain Influenza Vaccine

Vaccine was given to CDC employees and children, to determine the rate of reactions in children. Dosage was as recommended by USPHS:

Age 0-4	0.1 ml 200cca	Twice
Age 5-12	0.5 ml 200cca	Twice
13 plus	1.0 ml 200cca	Once

Vaccine recipients were instructed to take temperature approximately 8 hours and 16 hours after injection. A list of questions about arm pain, chills, headache, etc.,were answered on a special form. It was found that temperature elevation occurred in all instances (except one) which might be called severe reactions, so this is used as the determinant of severe reactions. Moderate local arm pain occurred in most cases. Six elevations of temperature were found in two families, suggesting either a family susceptibility or presence of other upper respiratory infection. In the intermediate (5-12) and adult age groups, temperature elevations were concentrated in the younger members of the group, which demonstrates the effect of relative dose size to age or weight.

Persons with Temperature over 100 Degrees

Age	Number	First Injection	Number	Second Injection
0-4	77	1 (1.3%)	66	1 (1.5%)
5-12	139	19 (13.7%)	117	4 (3.4%) Includes 12 with previous temps.
13 plus	188	7 (3.7%)		

It is noteworthy that none of the 193 persons receiving two doses of vaccine experienced severe reactions with both doses.

Use of Asian Influenza Vaccine in Tuberculosis Patients

(Reported by Drs. Albrecht and Mikol, N. Y. State Health Dept.)

A total of 517 patients in 5 N. Y. tuberculosis hospitals were given 200cca of Asian strain vaccine intramuscularly. The vaccine used was prepared by the state laboratory. There were only 30 detectable reactions (5.8%). The same reaction rate was found in 643 employees given the same vaccine. No reactivation of T.B. was noted.